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### 1993 Feature Article - Experimental Price Indexes for Age Pensioner Households: An Update

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#### Introduction

In January 1992 the ABS, acting upon a recommendation of the House of Representatives Standing Committee on Finance and Public Administration, published an information paper entitled The Australian Consumer Price Index: Feasibility of Constructing Price Indexes for Special Population Groups (ABS cat. no. 6445.0). In this study experimental price indexes were constructed for one and two person age pensioner households, total age pensioner households, and wage and salary earners.

This paper presents updated versions of these indexes and compares their behaviour.

#### Assumptions and methodology

In constructing the experimental indexes it has been assumed that current Consumer Price Index (CPI) price samples provide price information relevant to the target population groups. This assumption was also made in constructing the experimental indexes in the earlier study.

Weights for the experimental indexes were calculated as follows: Average weekly expenditure data for the special population groups from the 1988/89 Household Expenditure Survey (HES) were aggregated to the expenditure classes used in compiling the CPI. Adjustments were made for under reporting of spending on tobacco and alcohol and then expenditure for all categories was inflated to 1989/90 levels using movements in the relevant components of the CPI. The resulting average weekly household expenditures were used to calculate weights, with the weight for any category of expenditure being the percentage of total expenditure for which it accounts.

The procedure used in this study represents a refinement of that used previously in two areas; the level of HES data used to calculate weights and the definitions of special population groups.

In this study, fine level HES data were aggregated to the CPI sub-group level in most instances and to the expenditure class level in some cases. By contrast, the previous study simply assumed that broad level HES classifications were interchangeable with their nearest CPI equivalents, generally a CPI group.

In this study, single person age pensioner households were defined as capital city households of one person having the age pension as the largest source of income and with a weekly income of less than 175 dollars. Two person age pension households were defined as capital city households of two people with the age pension as the largest source of income and having a weekly income of less than 290 dollars. Upper income levels were calculated so that households with incomes below this figure would be receiving at least half of their income from the age pension (based on the old age pension levels and means test during 1988/89). The total pensioner household group was a weighted average of the one and two person pensioner

household groups.

Wage and salary earner households were defined as the CPI population group, namely metropolitan households deriving at least three quarters of their total income from wages and salaries but not including the ten percent of this group with the highest income. An important point here is that the wage and salary earner index is not the same as the CPI; the procedures used to adjust HES expenditure data for the calculation of CPI weights are more sophisticated than those employed here and yield different results. Further, the CPI is a series of chain linked indexes, the weights of which are adjusted every five years. By contrast, the experimental indexes presented here are based on a single set of weights.

## Results and discussion

Table 1 shows the average weekly expenditures calculated from HES data for each of the experimental populations while Table 2 lists the weights calculated for use in constructing each of the four experimental indexes. Graph 1 is a plot of both wage and salary earner and total pensioner households index levels against time for the period March 1987 to March 1993. Graph 2 is a plot of both one person and two person pensioner household index levels against time for the period March 1987 to March 1993. Graphs 3 and 4 plot changes in the levels of these indexes from the corresponding quarter of the previous year over the same period.

**TABLE 1. AVERAGE WEEKLY EXPENDITURE (\$)**

CPI expenditure category	Age pensioner households		Wage and salary earner households	
	1 person	2 person	Total	
Food	38.16	69.69	56.48	114.98
Clothing	9.65	14.37	12.39	39.71
Housing	26.61	26.18	26.37	112.45
Rents	9.07	8.82	8.93	30.83
Privately owned dwelling rents	8.27	8.04	8.14	28.48
Government owned dwelling rents	0.80	0.78	0.79	2.35
Home ownership	17.54	17.36	17.44	81.62
Mortgage interest charges	0.10	0.46	0.31	55.47
Local government rates & charges	7.31	8.66	8.09	12.75
House repairs & maintenance	8.39	5.82	6.90	11.21
House insurance	1.74	2.42	2.14	2.19
Household equipment	27.45	39.66	34.55	115.90
Transportation	10.17	35.05	24.63	98.84
Private motoring	8.48	32.38	22.37	92.11
Motor vehicles	1.46	7.03	4.70	25.25
Automotive fuel	2.77	9.61	6.74	29.15
Vehicle insurance	1.96	6.45	4.57	13.14
Motoring charges	0.48	1.34	0.98	4.97
Tyres & tubes	0.00	0.00	0.00	2.29
Vehicle servicing repairs & parts	1.81	7.95	5.38	17.31
Urbantransport fares	1.69	2.67	2.26	6.73
Health and personal care	11.93	10.25	10.95	38.36
Recreation and education	9.51	12.89	11.47	68.75
Total	139.11	225.53	189.33	632.61

Table 1 shows that there are significant differences in absolute expenditures across the population groups. However, the relevant comparison in studying the behaviour of price indexes is the proportion of total expenditure accounted for by each category; this is reflected in the

weights. Examination of Table 2 reveals substantial differences in weighting patterns for wage and salary earners and the total pensioner households group. A much higher weight is assigned to the food and health and personal care groups for the total pensioner households index while the wage and salary earner index gives greater weight to transportation and to recreation and education. These differences partly reflect the greater mobility and disposable household income of wage and salary earner households.

**TABLE 2. WEIGHTS USED IN CONSTRUCTING EXPERIMENTAL INDEXES**

CPI expenditure category	Age pensioner households		Total	Wage and salary earner households
	1 person	2 person		
Food	27.43	30.90	29.80	18.18
Clothing	6.94	6.37	6.55	6.28
Housing	19.12	11.61	13.92	17.77
Rents	6.52	3.91	4.71	4.87
Privately owned dwelling rents	5.94	3.56	4.30	4.50
Government owned dwelling rents	0.58	0.35	0.41	0.37
Home ownership	12.60	7.70	9.21	12.90
Mortgage interest charges	0.07	0.21	0.16	8.77
Local government rates & charges	5.25	3.84	4.28	2.01
House repairs & maintenance	6.03	2.58	3.64	1.77
House insurance	1.25	1.07	1.13	0.35
Household equipment	19.73	17.59	18.25	18.32
Transportation	7.31	15.54	13.00	15.62
Private motoring	6.10	14.36	11.81	14.56
Motor vehicles	1.05	3.12	2.48	3.99
Automotive fuel	1.99	4.26	3.56	4.61
Vehicle insurance	1.41	2.86	2.41	2.08
Motoring charges	0.35	0.59	0.52	0.78
Tyres & tubes	0.00	0.00	0.00	0.36
Vehicle servicing repairs & parts	1.30	3.53	2.84	2.74
Urbantransport fares	1.21	1.18	1.19	1.06
Tobacco and alcohol	4.05	7.73	6.60	6.90
Health and personal care	8.58	4.54	5.79	6.06
Recreation and education	6.84	5.72	6.06	10.87
Total	100.00	100.00	100.00	100.00

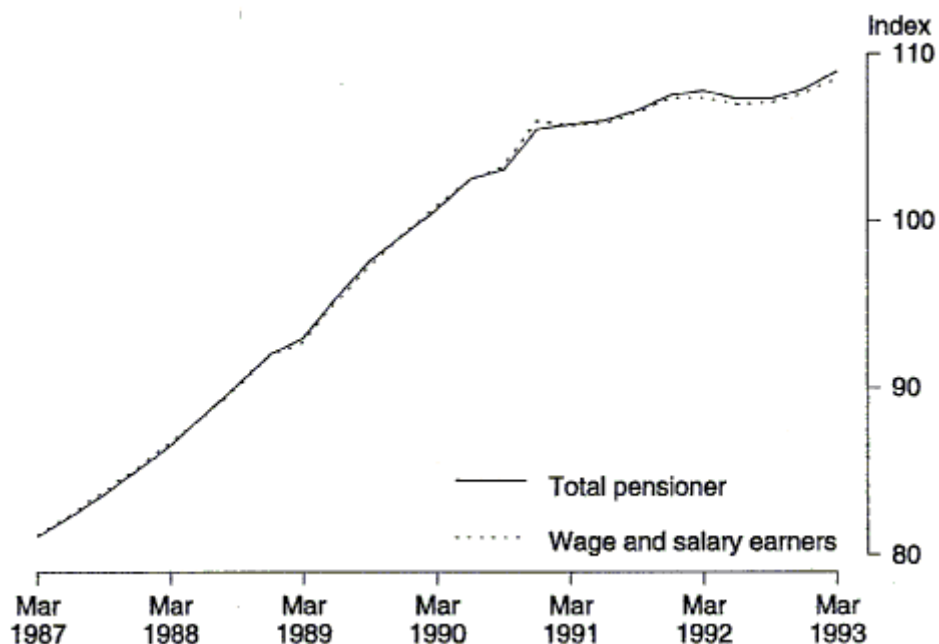
At the finer levels of classification, it is notable that mortgage interest charges represent a very much more significant burden to the wage and salary earner population than to the total pensioner households.

Interestingly, differences in weighting patterns for one and two person pensioner households are greater than the differences between the wage and salary earner households and total pensioner households. The most extreme differences occur in the housing and transportation groups. One person pensioner households spend a much greater proportion of their income on private rents, local government rates and charges and house repairs and maintenance than two person pensioner households. Examination of the transportation group suggests a much heavier reliance upon public transport by one person pensioner households; weights within this group for two person pensioner households are very similar to those used for the wage and salary earner population.

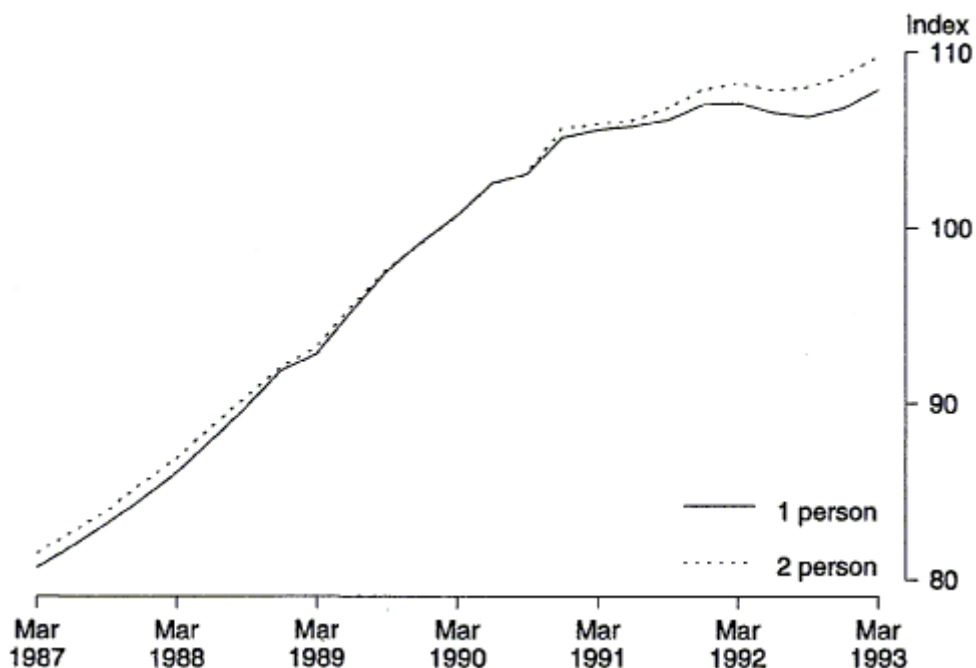
Despite the significant differences between weighting patterns for the wage and salary earner

and the total pensioner households indexes, the actual index numbers produced differ only slightly, as Graphs 1 and 3 show. Larger, though still not significant, differences in index numbers are observed between one person and two person pensioner households (see Graphs 2 and 4).

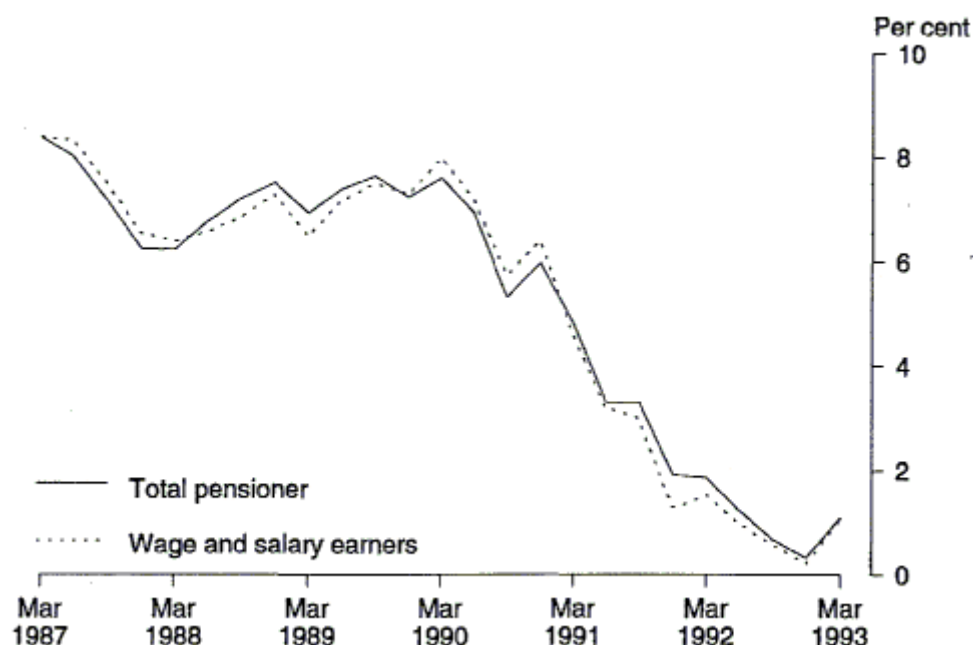
**GRAPH 1. EXPERIMENTAL INDEX LEVELS FOR TOTAL PENSIONER AND WAGE AND SALARY EARNER HOUSEHOLDS**



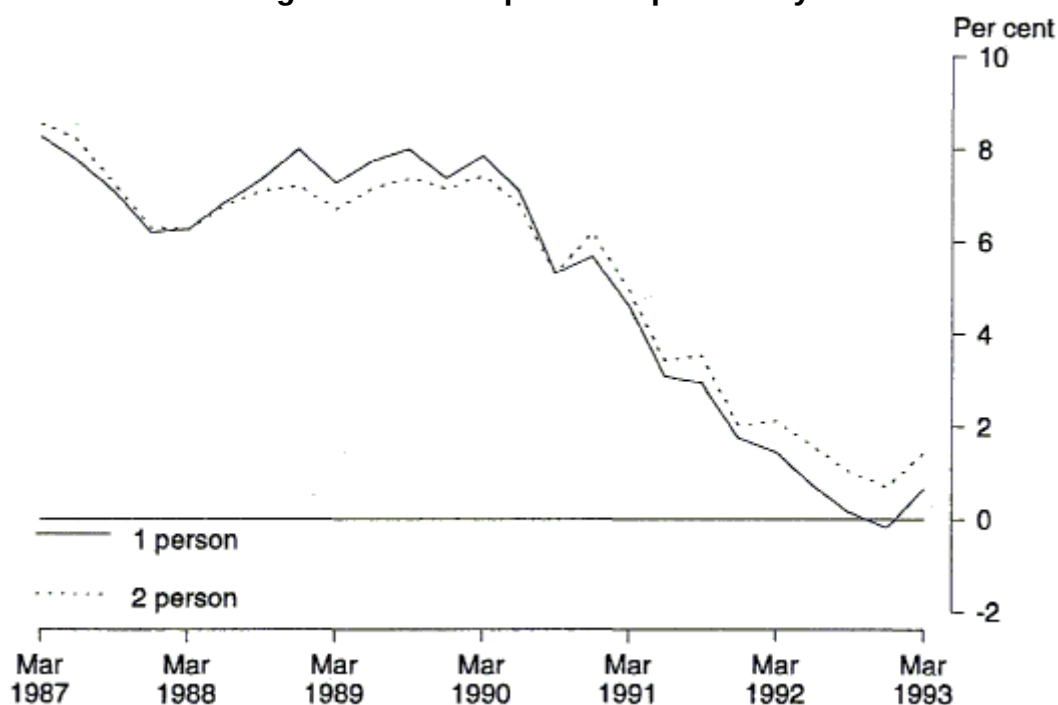
**GRAPH 2. EXPERIMENTAL INDEX LEVELS FOR PENSIONER HOUSEHOLDS**



**GRAPH 3. TOTAL PENSIONER AND WAGE AND SALARY EARNER HOUSEHOLDS**  
Change from same quarter of previous year



**GRAPH 4. PENSIONER HOUSEHOLDS**  
Change from same quarter of previous year



This observation illustrates an important consideration in exercises of this type; price indexes are insensitive to weights if prices move together. Significant differences in the levels of experimental indexes such as those constructed in this study are to be expected only if there is considerable divergence between the price movements of different expenditure classes in conjunction with significantly different expenditure weights. This study exemplifies the fact that divergence between price movements of different expenditure classes has not, in general, been significant in the longer term in the Australian CPI over the past fifteen years, although some significant short term differences can be observed. Were more significant divergences to occur in the component price indexes, the index levels for special population groups could differ substantially from that of the CPI "All Groups" index.

## Conclusions

Construction of price indexes for special population groups using price information collected for use with the CPI is unlikely to produce indexes which differ significantly from the CPI. This is consistent with the conclusions reached in the ABS information paper *The Australian Consumer Price Index: Feasibility of Constructing Price Indexes for Special Population Groups*.

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